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Tether and LATCH 2004 Update, Part 1

In the year since the 2003 LATCH manual was published, a number of controversies, additions, and changes have developed. This article will cover the major new issues regarding tethering child restraints. Specific LATCH-related issues will be published in the next edition.

Engineering group looks for solutions to incompatibility

The Society of Automotive Engineers (SAE) Child Restraint Systems Standards Committee (CRSSC), a voluntary group, has identified issues that relate to compatibility (and misuse) of tethering child restraints and is working on recommendations to deal with them, such as:

- Tether anchor points that are too far forward on the back deck of sedans to allow tight adjustment
- Some tether anchors under the seat (such as the Ford Windstar), which have the CRS adjuster at an odd angle
- Removal of head restraint in some vehicles prior to attaching a tether
- Look-alike tether anchor points and tie down devices
- Incompatible adjustment hardware on tether straps; some are too large for the flexible loops used to route the tether in extended-cab pickup trucks.

Maximum LATCH and Tether Anchor Weight Confusion

The controversy continues involving the gray area of upper weight limits for vehicle tether and/or LATCH anchors and child restraints with harnesses that can be used above 40 pounds. Child restraints are very specific about their upper limits. Airway instructions list maximum tether and LATCH use at 50 pounds, while Britax specifies 48 pounds for the lower anchors and up to 80 pounds for the tether anchor. E-Z-On Vest can be used up to 50 pounds with the standard tether anchor. In Canada, a number of high-back boosters can be used with tethers up to 48 pounds, due to a slight difference between the Canadian and U.S. standards.

At this time, it is impossible to give a general rule for lower and tether anchor usage limits other than 40 pounds along with the proviso to read the owner's manual. A number of vehicle manufacturers limit the use of tether anchors to a maximum of 40 pounds, whether or not it is stated in their manuals. Surprisingly, it appears that not all of them are comfortable with lower LATCH use above 40 pounds. This is despite the fact that FMVSS 213 uses the 48-pound, 6-year-old dummy to certify the child restraint and its LATCH attachments. The strength tests for vehicle anchors (FMVSS 225) are not crash tests and do not involve dummies of specific weights, so it is hard to correlate the two results.

For the 2003 LATCH-tether manual, the following vehicle manufacturers specified their tether weight limits as 40 pounds: Acura, Audi, Chrysler, Dodge, Jeep/Eagle, Plymouth, General Motors (all brands), Honda, and Volkswagen. All other manufacturers except Ford have not specified a weight limit.

Ford, which has done more tests of its tether anchors at higher weights than many other vehicle makers appear to have done, allows the use of **tethers** for a child up to 60 pounds in a CR with a shell and harness or 80 pounds in a vest or harness. Ford, which has tested **LATCH anchors** with the 48-pound, six-year dummy as well as a 60 pound dummy, recommends a 48-pound maximum weight for lower-LATCH anchors.

Starting September 1, 2004, model-year 2005 vehicles will be required to meet tougher LATCH (lower and tether) anchor tests. SRN understands that some current vehicles are designed to meet those tests in anticipation of the stricter standard, yet there is no indication as to which ones these are or how to identify them. NHTSA does not require vehicle manufacturers to publish maximum weight limits, so it is not clear how specific the 2005 vehicle instructions will be regarding these issues. See the September/October 2003 issue of *SRN* (pp. 2, 4–5) for a full discussion of the issue of tether use at weights above 40 pounds. (These articles also are posted on the web site: *www.saferidenews.com*.)

There are indications from the SAE committee members (see column 1) that some manufacturers are doing additional testing at higher weights. NHTSA is being urged to measure tether and lower attachment forces in 35-mph NCAP tests to measure the actual stresses on tether and LATCH anchors and attachments in a crash. The agency has begun examining the issue.

Editor's Note

Upon reading vehicle manuals, parents using CRs rated for use over 40 pounds might decide they should disconnect the tether after their child reaches 40 pounds (an understandable but, in my personal opinion, poor decision. For special needs restraints, the installation of heavy-duty tether anchor hardware is required but difficult to do. **For lower LATCH anchors, an alternative exists, the safety belt. For a tether, however, there is no alternative.**

Meanwhile, CPSTs and Instructors should understand the crash dynamics related to tethers so they can provide information to parents to help them decide what to do. A tether should be seen as an important part of the primary restraint

system for a forward-facing CR along with the seat belt or lower LATCH anchors. Keep in mind that forward-facing CRs have to pass the no-tether test as part of 213—with a higher allowable head excursion—when tested using the three- and six-year dummies with either the seat belt or LATCH attachments. Also, lower LATCH anchors in vehicles have to pass a pull-test without the tether anchor in use.

If a tether anchor for a CR occupied by a heavier child were to pull out completely, which is considered highly unlikely and has not been seen in real-world crashes, it would do so late in the crash sequence. It would already have absorbed its share of energy (in deforming or pulling out after stopping forward motion while still attached) and have prevented considerable head excursion. (The very slim risk of a tether hook flailing about after pulling out should be seen in relation to the substantial benefit of reduced head excursion due to tether use.)
—Nancy J. Lang and Deborah Stewart

Tether-related Updates for the 2003 Edition of the LATCH-Tether Manual

Please use the following information to update your 2003 version of *LATCH: Lower Anchors and Tethers for Child Restraints.* To order a copy of the yellow 2003 edition (which is significantly different from the earlier editions), please contact Safe Ride News at 800-403-1424 or *www.saferidenews.com.* The next edition will not appear until 2005.

DaimlerChrysler is beginning to mark cargo tie-downs that are NOT to be used as tether anchors. The 2004 Dodge Durango is the first vehicle with the mark, which looks like a tether symbol with a slash. The owner's manual also points out the distinction.

The Ford Freestar has replaced the Windstar and no longer requires the awkward downward hooking of the tether under the seat. The anchor now is on the back of the seat for both captains chairs as well as third-row bench seats.

Vehicles over 8500 pounds are exempt from FMVSS 225. For example, the F-250/350 pickups and Ford Excursion are over the 8500-pound weight and are exempt from FMVSS 225. These vehicles have tether anchors but not LATCH.

The hard top (not convertible) New VW Beetle has tether anchors accessible by removing the luggage compartment cover. The anchors are on the seat back. (Convertibles are not required to have tether anchors.)

Britax has confirmed that it is acceptable to tether the rear-facing Roundabout to the lap portion of the fastened lap/shoulder belt in an unoccupied front seat. The tether strap is passed through the seat bight of the front seat to reach the lap belt.

Five-passenger SUVs made before September 1, 2004, may have two or three tether anchors for the rear seats. Those built after that time must have three rear seat tether anchors. NHTSA allowed more time to install the third anchor in 5-passenger SUVs because several of them have 50/50 split rear seat backs that do not work well with typical tether straps and anchors.

Dorel (page 68) is now equipping its tethers with tilt-lock adjusters, replacing the double-slide adjusters that were extremely difficult to adjust properly.

On page 75, the correct website for Tumble Forms (Sammons Preston Rolyan) should read:

On page 211, the **old** Toyota part number is missing one digit. It should read: 04731-22012. The current part number is correct: 73709-12010.
http://www.sammonspreston.com/

Free anchor installation services

DaimlerChrysler, GM, Ford, VW, Audi, and Saab all have tether anchor installation policies or programs that their dealerships should honor. Only GM limits its free hardware/installation to one anchor.

The specifics of these programs are:

DaimlerChrysler: Technical Service Bulletin 23-08-00 Rev. A

Ford: Program R7C

GM: Service Bulletin #99-09-40-004 (Jan. 2000)

Saab: Call for free hardware, 800-955-9007. (Anchors should be easy to install without dealer assistance, but if installation is needed, it is free.)

Volkswagen and Audi: Tech Bulletin 69-01-01.

There continue to be reports of misunderstandings with and lack of cooperation by some dealerships when it comes to the installation of tether anchors. Since the manufacturer is paying for the service, the dealerships are "required" to carry it out. Some dealers try to avoid providing some services, particularly on a newer vehicle that was sold by another dealer, but they have a responsibility under the franchise agreement to provide service even if they did not sell the vehicle. Having the service bulletin or program reference number (above) will speed up the process and help the service writer to access the necessary information. (There may be no manufacturer-supplied tether hardware available for certain older vehicles.) See chapter 4 in the LATCH manual for details on installing tether anchor kits.
—Nancy J. Lang

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